

SINGLE-ENDED SUPPLY PREAMPLIFIER WITH HIGH POWER SUPPLY REJECTION RATIO

ABSTRACT OF THE DISCLOSURE

A single-ended input amplifier circuit for use within a magnetic media storage system includes circuits for concurrently biasing and amplifying signals generated by a magnetoresistive element. The amplifier receives power from a single-ended power supply. A first resistor is included for setting the gain of the amplifier and providing an output signal corresponding to the signals generated by the magnetoresistive element. A first feedback circuit generates a first biasing current provided to the magnetoresistive element. The first feedback circuit includes a first transconductance amplifier which amplifies the difference between the output signal and a reference voltage. A second feedback circuit generates a second biasing current provided to the magnetoresistive element. The second feedback circuit includes a second transconductance amplifier which amplifies the difference between the reference voltage and a voltage signal taken from a node between two resistors. A transistor is coupled between the receiving circuit and the first resistor for controlling the generation of the output signal by the first resistor. The transistor is controlled by the output of the second transconductance amplifier and a first capacitor. The first resistor, the transistor and the second feedback circuit are all referenced to the single-ended supply voltage for providing an increased power supply rejection ratio. The second biasing current is provided through two resistors thereby increasing the output impedance of the amplifier circuit.

Figure 3